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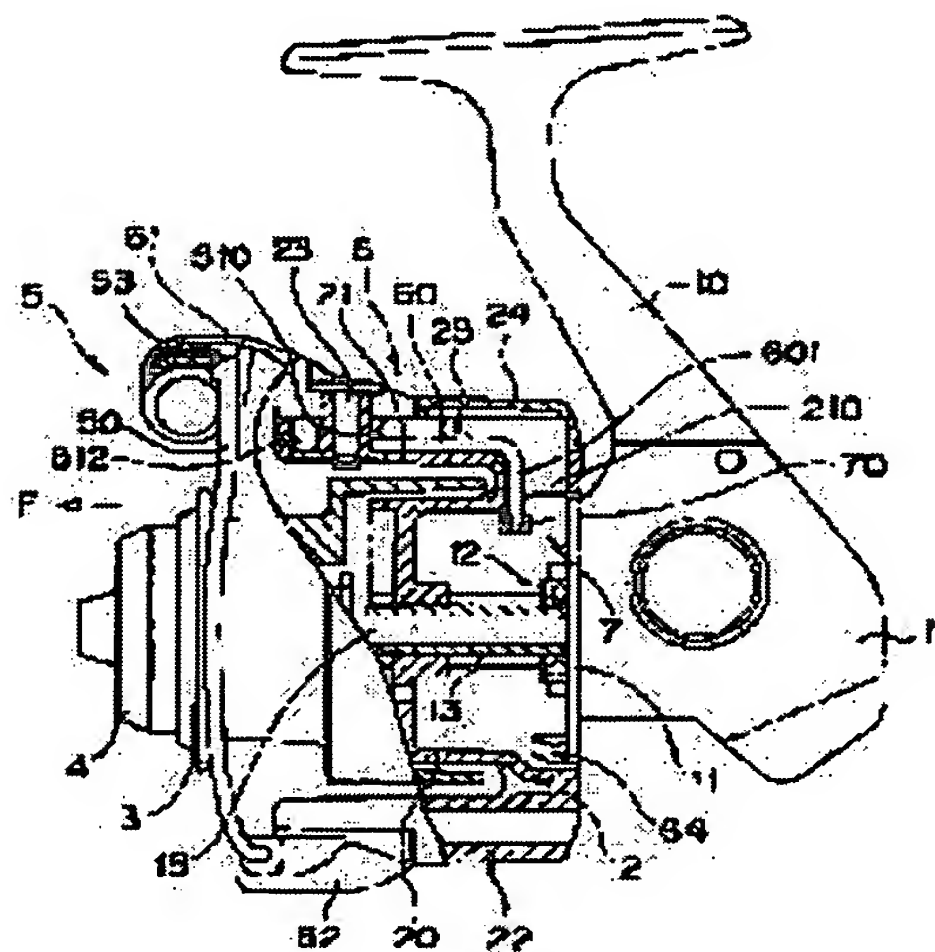
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(54) SPINNING REEL FOR FISHING

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a spinning reel for fishing eliminated from a restriction on a braking range for the rotation of a rotor.

SOLUTION: This spinning reel for fishing comprises a reel body 1, a rotor 2, supported on the reel body 1 in a state thereof rotatable around the rotation axial line extending in the front and rear directions of the reel body 1 and having the outer periphery equipped with a pair of bail supporting arms 21 and 22, a bail arm 50 supported on the pair of bail supporting arms 21 and 22 in a state thereof movable between a winding position for a fishing line and a



releasing position therefor, an interlocking lever member 60, supported on the rotor 2 in a state thereof capable of being brought into contact with and separated from the reel body 1 and driven to the side of the reel body 1 interlockingly with the movement of the bail arm 50 to the releasing position and a braking member 70 capable of coming into contact with reel body 1 from the moving direction thereof and producing braking actions on the interlocking lever member 60 when driving the interlocking lever member 60 installed in a base end 601, which faces to the side of the reel body 1, in the interlocking lever member 60 to the side of the reel body 1.

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CLAIMS

[Claim(s)]

[Claim 1] A spinning reel for fishing characterized by providing the following A main part of a reel Rota where it was supported in the pivotable condition by said main part of a reel, and a bail support arm of a pair was formed in a periphery around axis of rotation prolonged in a cross direction of said main part of a reel A bail arm supported by bail support arm of said pair in the movable condition in between a rolling-up location of a fishing line, and emission locations said main part of a reel -- receiving -- approach and alienation -- with a interlocking lever member which is supported by said Rota in the condition that it can operate, is interlocked with migration in said emission location of said bail arm, and is driven to said main part side of a reel A braking member which said main part of a reel is contacted [member] and produces [the] a braking operation over said interlocking lever member from migration when it is prepared in the end face section which attends said main part side of a reel of said interlocking lever member and said interlocking lever member drives to said main part side of a reel

[Claim 2] A spinning reel for fishing according to claim 1 characterized by making said braking member removable to said interlocking lever member.

[Claim 3] A spinning reel for fishing according to claim 1 or 2 characterized by enabling justification of the contact surface over said braking member of said main part of a reel at said cross direction.

[Claim 4] A spinning reel for fishing according to claim 1 to 3 characterized by establishing a distinction means for matching with a rotation location of said Rota whether said braking member and said main part of a reel can contact, and distinguishing from the outside.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to the spinning reel for fishing which can brake rotation of Rota where a bail arm is moved to a fishing line emission location.

[0002]

[Description of the Prior Art] As this kind of a spinning reel, the slider kick which was interlocked with migration in the fishing line emission location of a bail arm, and was built in the bail support arm is retreated to the main part side of a reel, and what is contacted to the kick centrifugal spark advancer made from an elastic body in which that slider kick that retreated was prepared at the main part side of a reel, and brakes rotation of Rota is indicated by JP,54-39427,Y. In this spinning reel, if the damping force by the kick centrifugal spark advancer is resisted and Rota is rotated, the back end of a slider kick will run aground for the actuation cam prepared in the main part of a reel, a slider kick is extruded by that cause to the front, and a bail arm is automatically reversed to a fishing line rolling-up location.

[0003]

[Problem(s) to be Solved by the Invention] In the spinning reel mentioned above, from the direction which intersects perpendicularly mostly to the slide direction of a slider kick, a kick centrifugal spark advancer is contacted and carries out elastic deformation. For this reason, if a bail arm is moved to the emission location of a fishing line when a kick lever and a kick centrifugal spark advancer are in the same location about the hand of cut in Rota, it is in the middle of that migration, and a kick lever and a kick centrifugal spark advancer cannot interfere, and a bail arm cannot be pushed down to an emission location. In order to avoid such un-arranging, a short kink colander cannot be obtained for a kick centrifugal spark advancer, but so, damping force can be given only in the narrow range about the hand of cut in Rota.

[0004] Moreover, as Rota is rotating, a slider kick and a kick centrifugal spark

advancer collide, and a comparatively loud contact sound occurs. Furthermore, when a bail arm is moved to the emission location of a fishing line and a mechanism is thrown in, a bail arm rotates and there is a possibility that it may be interfered by it and summing actuation (actuation of adjusting the speed of the thread which presses down and lets out with a finger the fishing line wound around the spool) cannot be performed smoothly. That is, in order that an angler may perform summing actuation with the finger of the hand which grasped the attachment foot of the main part of a reel, the range suitable for hanging a finger on a spool is restricted to the hand-of-cut both sides of Rota in the range of about 60 degrees centering on the location of the attachment foot of the main part of a reel, respectively. However, in the conventional spinning reel, since Rota is braked only in the very narrow range about the hand of cut, Rota rotates until it arrives at the braking location, it trespasses upon the range suitable for the summing actuation which the bail arm mentioned above with the rotation, and a possibility of being hard that it may come to hang a finger is in a spool. [0005] This invention aims at offering the spinning reel for fishing which canceled the limit about a braking range to rotation of Rota.

[0006]

[Means for Solving the Problem] It matches with a drawing in which an operation gestalt of this invention is shown hereafter, and this invention is explained. However, this invention is not limited to a gestalt of illustration.

[0007] Invention of claim 1 A main part of a reel (Rota (2 by which it was supported in the pivotable condition by main part of a reel (1), and a bail support arm (21 22) of a pair was formed in a periphery around axis of rotation prolonged in 1) and a cross direction of a main part of a reel (1)), A bail arm supported by bail support arm (21 22) of a pair in the movable condition in between a rolling-up location (Pw) of a fishing line, and emission locations (Pp) (50), a main part of a reel (1) -- receiving -- approach and alienation -- a condition that it can operate -- Rota -- with a interlocking lever member (60) which is supported by (2), is interlocked with migration in an emission location (Pp) of a bail arm (50), and is driven to a main part (1) side of a reel It is prepared in the end face section (601) which attends a main part (1) side of a reel of a interlocking lever member (60). When a interlocking lever member (60) drives to a main part (1) side of a reel, it is characterized by spinning reel for fishing possessing a braking member (70) which a main part of a reel (1) is contacted [member] and produces [the] a braking operation over a interlocking lever member (60) from migration.

[0008] According to this invention, if a bail arm (5) is moved to an emission location (Pp) from a rolling-up location (Pw) of a fishing line, a interlocking lever member (60) will move to a main part (1) side of a reel, and a braking member (70) will contact a

main part of a reel (1). Thereby, a braking operation is given to a interlocking lever member (60), and rotation of Rota (2) is braked. In order for a braking member (70) prepared in a interlocking lever member (60) to contact [of a interlocking lever member (60)] a main part of a reel (1) from migration, unlike the conventional example contacted from the migration direction and a direction which intersects perpendicularly, it is not necessary to restrict a range where a interlocking lever member (60) and a braking member (70) contact to a narrow range about a hand of cut of Rota (2).

[0009] In invention of claim 2, a braking member (70) was made removable to a interlocking lever member (60) in a spinning reel for fishing of claim 1. Therefore, a product which needs a braking member (70), and a product which is not needed can be made easily, and can be divided. For example, while attaching a braking member (70) in a spinning reel for surf-fishing and enabling braking of Rota (2), a braking member (70) is removed, and braking of Rota (2) is made impossible, and it can constitute from a spinning reel for surf-fishing so that from an injection of a mechanism to reversal to a rolling-up location (Pw) of a bail arm (50) can be performed lightly and quickly.

[0010] In invention of claim 3, justification of the contact surface (740) over a braking member (70) of a main part of a reel (1) was enabled in claim 1 or a spinning reel for fishing of 2 at said cross direction. According to this invention, a location of the contact surface can be adjusted, contact pressure between a main part of a reel (1) and a braking member (70) can be changed, and damping force which joins Rota (2) by that cause can be made to fluctuate. Although magnitude of desirable damping force changes with magnitude and sensation of size distance's at the time of throwing in a mechanism, and an angler's hand variously, damping force which adjusted a location of the contact surface (740) according to it, and was doubled with liking of a user can be acquired.

[0011] In invention of claim 4, a distinction means (8) for matching with a rotation location of Rota (2) whether a braking member (70) and a main part of a reel (1) can contact, and distinguishing from the outside was established in one spinning reel for fishing of claims 1-3. According to this invention, it can grasp easily whether when a bail arm (50) is pushed down on an emission location (Pp), rotation of Rota (2) is braked from the current position of Rota (2), and a distinction means (8).

[0012]

[Embodiment of the Invention] Hereafter, the operation gestalt of this invention is explained with reference to an accompanying drawing.

– Explain the spinning reel for fishing applied to the 1st operation gestalt of this invention with reference to the 1st operation gestalt– drawing 1 – drawing 5 . As shown in drawing 1 and drawing 2 , the spinning reel of this operation gestalt has the

main part 1 of a reel, and Rota 2 arranged ahead [the] (the direction of arrow head F of drawing 1). The attachment foot 10 to a beam (un-illustrating) is formed in the main part 1 of a reel at one. The disc-like flange 11 is formed in the front end of the main part 1 of a reel, and the hollow shaft 13 is attached in it free [rotation] through bearing 12 at the flange 11. The tip side (left end side of drawing 1) of a hollow shaft 13 is connected with Rota 2 and the same axle. The end face side of a hollow shaft 13 is connected with the handle 14 attached in the main part 1 of a reel free [rotation] through the rotation transfer device in which it does not illustrate [which was built in the main part 1 of a reel]. If a handle 14 is rotated, the rotation will be transmitted to a hollow shaft 13, and the rotation drive of Rota 2 will be carried out at a hollow shaft 13 and one.

[0013] The spool shaft 15 is inserted in the inner circumference of a hollow shaft 13, and the spool 3 is attached in the tip side (left end side of drawing 1). A non-illustrated fishing line is twisted around the periphery of spool 3. The end face side of spool 3 is connected with the handle 14 through the oscillation device in which it does not illustrate. An oscillation device is prepared in the main part 1 of a reel, or the interior of Rota 2, and changes rotation of a handle 14 into the reciprocating motion of the cross direction (the direction of axis of rotation of Rota 2) of spool 3. In addition, the drag knob 4 which adjusts drag damping force is attached at the tip of spool 3.

[0014] Rota 2 has the Rota main part 20 mostly formed in the shape of [of symmetry] a cartridge about the axis of rotation, and the bail support arms 21 and 22 of the pair prepared in the periphery by the side of the end face of the Rota main part 20. The Rota main part 20 and the bail support arms 21 and 22 are formed in one. However, the Rota main part 20 and the bail support arms 21 and 22 may be manufactured separately, respectively, and you may combine mutually at an after production process.

[0015] The bail assembly 5 is attached at the tip of the bail support arms 21 and 22. The bail assembly 5 has the bail arm 50, and the bail arm lever 51 and the bail arm electrode holder 52 which are attached in the both ends. The bail arm lever 51 and the bail arm electrode holder 52 are connected with the bail support arms 21 and 22 free [rotation] through the supporting-point pin 23, respectively. By rotation of the bail arm lever 51 centering on the supporting-point pin 23 and the bail arm electrode holder 52, the bail arm 50 is rotated between the rolling-up location Pw (continuous line location of drawing 2) of a fishing line, and the emission location Pp (location of the fictitious outline of drawing 2). In addition, drawing 1 shows the condition of the bail arm 50 having rolled round and having been held in the location Pw. The condition of having moved the bail arm 50 to the emission location Pp is shown in drawing 3 . If

the bail arm 50 is rolled round and it is made to move to a location Pw, the fishing line which it let out from the spool 3 will engage with the bail arm 50, and it is rolled round by spool 3, a fishing line being guided at a roller 53, if Rota 20 is rotated in the predetermined direction in the condition.

[0016] As shown in drawing 1 and drawing 3 , covering 24 is attached in the bail support arm 21 of the side equipped with the bail arm lever 51 from the radial outside in Rota 2, and the receipt room 25 is formed with the covering 24 and the bail support arm 21. As shown in drawing 4 , the link 62 which connects the kick lever 60 movable to a longitudinal direction, this and the slider 61 movable in the abbreviation same direction, a slider 61, and the bail arm lever 51 as an element which constitutes the automatic turnaround 6 of the bail arm 50, and the dead point spring 63 as a compression coil spring which energizes a slider 61 to the tip side of the bail support arm 21 are formed in the receipt room 25. The bail support arm 21 is leaned so that the tip side may project to the bail arm 50 side of the emission location Pp rather than a end face side. And the longitudinal direction (the migration direction) of the kick lever 60 is also leaned in the same direction as the bail support arm 21.

[0017] The point 600 of the kick lever 60 is inserted in the flabellate form crevice 511 formed in the rear-face (clamp face over bail support arm 21) 510 side of the bail arm lever 51 (refer to drawing 3). And the boss 512 who projects in the receipt room 25 is adjoined and formed in the crevice 511 at the bail arm lever 51. As shown in drawing 4 (a), when the bail arm 50 rolls round and it is in a location Pw, the point 600 of the kick lever 60 engages with the wall surface of the opposite side in the boss 512 of a crevice 511, and thereby, the kick lever 60 is held in the location by the side of the tip of the bail support arm 21 (location shown in drawing 1). On the other hand, as shown in drawing 4 (b), when the bail arm 50 is in the emission location Pp, a boss 512 contacts the point 600 of the kick lever 60, and thereby, the kick lever 60 is held in the location by the side of the end face of the bail support arm 21 (location shown in drawing 3).

[0018] As shown in drawing 1 and drawing 3 , about 90 degrees of end face sections 601 of the kick lever 60 are crooked toward the radial center side of Rota 2, and they project in the Rota main part 20 through the through tube 210 of the bail support arm 21. As shown in drawing 1 , drawing 3 , and drawing 4 , the kick boss 64 is formed in the flange 11 of the main part 1 of a reel as an element which constitutes an automatic turnaround 6. As shown in drawing 5 , it goes up to the kick boss 64 to the hand of cut (the direction of arrow head R of drawing 5) in Rota 2 at the time of fishing line rolling up, and the cam side 640 which inclined so that inclination might be made is formed in him.

[0019] Where the bail arm 50 moved to the emission location Pp and the kick lever 60

is stuffed into the main part 1 side of a reel (drawing 3 and condition of drawing 4 (b)), if Rota 2 is rotated in order to roll round a fishing line to spool 3, it is in the middle of the rotation, and the end face section 601 of the kick lever 60 will run aground to the cam side 640, and will be thrust up by the longitudinal direction. Since the point 600 of the kick lever 60 touches the boss 512 of the bail arm lever 51 at this time as shown in drawing 4 (b), it has been kicked so that the bail arm lever 51 may rotate in connection with the pressure from below of the kick lever 60 to a counterclockwise rotation [of drawing 4 (b)] Pw, i.e., rolling-up location, side.

[0020] Although a slider 61 and a link 62 also operate with rotation of the bail arm lever 51, it moves so that a slider 61 may compress the DETTO point spring 63, until it reaches the dead point with which a link 62 overlaps the axis S of a slider 61. And if a link 62 passes the dead point, the migration direction of a slider 61 will be reversed, the bail arm 50 rolls round through the bail arm lever 51 according to the stability of the dead point spring 63, and it drives to a location Pw. In addition, when rolling round the bail arm 50 and making it move to the emission location Pp from a location Pw, if the DETTO point spring 63 is compressed by the slider 61 and a link 62 passes the DETTO point by it until a link 62 reaches the DETTO point, the bail arm 50 will drive to the emission location Pp through the bail arm lever 51 by the stability of the DETTO point spring 63.

[0021] As shown in drawing 1 and drawing 3 , the braking member 70 is attached in the end face section 601 of the kick lever 60 as an element which constitutes a damping device 7. This damping device 7 is for braking rotation of Rota 2 in case the bail arm 50 is in the emission location Pp of a fishing line. The braking member 70 consists of elasticity material, such as rubber, and is inserted in the kick lever 60 free [attachment and detachment]. When the braking member 70 is constituted from such elasticity material, an impact when the braking member 70 and the main part 1 of a reel contact is eased, and a contact sound is reduced. In addition, rather than the contact range of the kick boss 64 of the kick lever 60, the braking member 70 is biased toward the radial center side of Rota 2, and is prepared.

[0022] If it coordinates with migration in the emission location Pp of the bail arm 50 and the kick lever 60 is stuffed into the main part 1 side of a reel as shown in drawing 3 , the braking member 70 and the flange 11 of the main part 1 of a reel will contact in the migration direction of the kick lever 60, and the braking member 70 will carry out elastic deformation. A braking operation is given to the kick lever 60 by the stability over this elastic deformation, and, thereby, rotation of Rota 2 is braked. If this damping force is resisted and a handle 14 is rotated, the kick lever 60 will contact the kick boss 64, the bail arm 50 will roll round, and it will be automatically reversed to a location Pw.

[0023] In the spinning reel of this operation gestalt, since the braking member 70 and

the main part 1 of a reel are contacted [of the kick lever 60] from migration and the elastic deformation of the braking member 70 is made to carry out in the direction, it is not necessary to restrict narrowly the range where a braking operation of Rota 2 is acquired, and the range where a braking operation is acquired can be set up freely. And with this operation gestalt, contact of a flange 11 and the braking member 70 is especially enabled by the perimeter of the hand of cut in Rota 2. Therefore, even if Rota 2 is located in which location, if the emission location Pp is made to rotate the bail arm 50, the braking member 70 and a flange 11 will contact in the location, and Rota 2 will be braked. For this reason, there is also no possibility that the bail arm 50 may rotate and it may be interfered with summing actuation during an injection of a mechanism.

[0024] In addition, the spinning reel of this operation gestalt can be changed into specification without a damping device by removing the braking member 70 from the kick lever 60.

[0025] – The 2nd operation gestalt– drawing 6 – drawing 9 show the 2nd operation gestalt of this invention. In addition, the same sign is given to the component which is common in drawing 1 mentioned above – drawing 5 .

[0026] With this operation gestalt, the braking member 70 and its attachment structure are changed to the 1st operation gestalt mentioned above. As shown in drawing 8 and drawing 9 , the braking member 70 carries out bending shaping of the metal band-like sheet metal which has spring nature at double fold. In addition, the cross section where drawing 9 met the IX-IX line of drawing 8 in the condition that drawing 8 saw the kick lever 60 from [of drawing 6] arrow head VIII is shown, respectively. One bending section 700 of the braking member 70 is fabricated by abbreviation Yamagata, and the top-most-vertices portion contacts to the flange 11 of the main part 1 of a reel (refer to drawing 7). The bending section 701 of another side is inserted in the slit 602 prepared in the end face section 601 of the kick lever 60. A slit 602 and the kick lever 60 are made to cross at right angles, a through tube 603 is formed, and a through tube 703 is formed also in the braking member 70 corresponding to it. The kick lever 60 and the braking member 70 are mutually connected by positioning these through tubes 603 and 703 on the same axle, and inserting a pin 71 from the end side of a through tube 603. If a pin 71 is sampled and the braking member 70 is removed from the kick lever 60, it can change into the specification in which the damping device of Rota 2 is not formed.

[0027] – The 3rd operation gestalt– drawing 10 is drawing in which having made the feature portion of the spinning reel concerning the 3rd operation gestalt of this invention correspond to drawing 1 , and having shown it. In addition, the same sign is given to the component which is common in drawing 1 .

[0028] It is to differ from the 1st operation gestalt which this operation gestalt mentioned above in the point that justification of the contact surface 740 over the braking member 70 of the main part 1 of a reel was enabled at the cross direction (longitudinal direction of drawing 10) of the main part 1 of a reel. That is, the mounting hole 110 of plurality (two are shown by a diagram.) is formed in the flange 11 of the main part 1 of a reel, an adjusting screw 72 is inserted in those mounting holes 110 respectively free [rotation], it escapes by snap ring 73a, and the stop is carried out. The thread part 720 of each adjusting screw 72 is thrust into the braking board 74. It is formed in the shape of [which is prolonged along the periphery edge of a flange 11] a ring, and the braking board 74 is made into the contact surface [as opposed to the braking member 70 in the surface] 740. If an adjusting screw 72 is rotated, the braking board 74 will move to the cross direction of the main part 1 of a reel, and the location of the contact surface 740 will be adjusted in connection with it. The elastic deformation of the braking member 70 at the time of the braking member 70 and the contact surface 740 contacting changes by this, and the damping force over rotation of Rota 2 fluctuates in connection with it.

[0029] – The 4th operation gestalt– drawing 11 and drawing 12 show the 4th operation gestalt of this invention. In addition, the same sign is given to the component which is common in drawing 1 mentioned above – drawing 5 .

[0030] As shown in drawing 11 and drawing 12 , with this operation gestalt, the contact surface 111 over the braking member 70 and the non-contact side 112 which was able to be lowered one step rather than the contact surface 111 are formed in the flange 11 of the main part 1 of a reel. In addition, by drawing 12 , a dashed line shows the range of the contact surface 111, and the hatching field shows the range of the non-contact side 112, respectively. When migration in the emission location Pp (refer to drawing 2) of the bail arm 50 is interlocked with and the kick lever 60 retreats to the main part 1 side of a reel, the location of the contact surface 111 and the non-contact side 112 is set for the braking member 70 to contact the contact surface 111, and not to contact the non-contact side 112, respectively.

[0031] According to the above configuration, in the hand of cut in Rota 2, the range which can brake rotational, and an impossible range can be set as arbitration according to arrangement with the contact surface 111 and the non-contact side 112. For example, if the bail arm 50 exists in the hand-of-cut both sides of Rota 2 in the range of about 60 degrees focusing on the attachment foot 10, respectively as the angle phi showed to drawing 12 , summing actuation cannot be performed smoothly. Then, when the bail arm 50 is in the range of the above-mentioned angle phi, the non-contact side 112 can be arranged so that rotation of Rota 2 may not be braked by the braking member 70, and it can be made to stop certainly in the location which does

not become the obstacle of summing actuation of the bail arm 50 by that cause.

[0032] In addition, when limiting a braking range as mentioned above, it is desirable to enable it to distinguish whether rotation of Rota 2 is braked by whether the distinction indicator 8 is formed in the range (range shown in drawing 12 by * mark) in which the non-contact side 112 is established with means, such as to change a paint color tone or to print, and the bail support arm 21 is in the location of the distinction indicator 8. In this case, by checking that there is no bail support arm 21 into the distinction indicator 8, and pushing down the bail arm lever 51 on the emission location Pp, rotation of Rota 2 can be braked certainly and Rota 2 does not rotate carelessly during a mechanism injection.

[0033] In addition, it is not necessary to make the location of the distinction indicator 8, and the location of the non-contact side 112 not necessarily in agreement about the hand of cut in Rota 2. For example, an index may be formed in the middle Rota periphery of the bail support arms 21 and 22 of a pair, and the distinction indicator 8 may be arranged so that the range where a braking operation is not acquired by relation with the index, or the range obtained can be distinguished.

[0034] Although the braking member 70 was attached in the kick lever 60 built in the near bail support arm 21 with which the bail arm lever 51 is formed with each operation gestalt mentioned above, the kick lever 60 may be built in the bail support arm 22 by the side of the bail arm holder 52 with the braking member 70. The lever member which interlocks and moves to the bail arm 50 independently [the kick lever 60] may be arranged inside the bail support arm 22 of the opposite side in the bail support arm 21 which built in the kick lever 60, and the braking member 70 may be formed in the lever member. The braking member 70 can consist of springs using elasticity material, such as rubber, or the wire rod other than flat spring.

[0035]

[Effect of the Invention] As explained above, in order for the braking member prepared in the interlocking lever member to contact [of a interlocking lever member] a braking member from migration according to this invention, unlike the conventional example for which a interlocking lever member and a braking member contact from the migration direction of a interlocking lever member, and the direction which intersects perpendicularly, it is necessary not to restrict the range where the braking operation by the braking member is acquired to a narrow range about the hand of cut in Rota. Therefore, the large range of the hand of cut is covered, braking of Rota is enabled, this devises, rotation of Rota under injection is regulated, and summing actuation can be ensured [smoothly and], without being interfered by the bail arm. In addition, the following effect also does so in two or less-claim invention.

[0036] In invention of claim 2, since a braking member can be detached and attached

to a interlocking lever member, the product which needs a braking member, and the product which is not needed can be made easily, and can be divided. In invention of claim 3, to a cross direction, the contact surface by the side of the main part of a reel over a braking member is written as justification is possible, and damping force can be optimized according to liking of a user etc. In invention of claim 4, since it matches with the rotation location of Rota whether rotation of Rota is braked and it can be easily grasped when a bail arm is pushed down on an emission location, there is no possibility that damping force acts or may not act against a user's mind, and user-friendliness improves.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] Front view showing a condition when a bail arm moves to the rolling-up location side of a fishing line in the spinning reel concerning the 1st operation gestalt of this invention.

[Drawing 2] The side elevation of the spinning reel concerning the 1st operation gestalt.

[Drawing 3] Drawing showing the condition of having changed the bail arm to the emission location side of a fishing line, from the condition of drawing 1 .

[Drawing 4] Drawing showing the automatic turnaround of a bail arm established in the bail support arm in the spinning reel concerning the 1st operation gestalt.

[Drawing 5] Drawing showing the kick boss for moving the kick lever for bail arm reversal in the spinning reel concerning the 1st operation gestalt.

[Drawing 6] Drawing in which having made the spinning reel concerning the 2nd operation gestalt of this invention correspond to drawing 1 , and having shown it.

[Drawing 7] Drawing in which having made the spinning reel concerning the 2nd operation gestalt correspond to drawing 3 , and having shown it.

[Drawing 8] Drawing showing the condition of having seen the braking member and its attachment structure of the spinning reel concerning the 2nd operation gestalt from [of drawing 6] arrow head VIII.

[Drawing 9] The cross section in the IX-IX line of drawing 8 .

[Drawing 10] Drawing in which having made the spinning reel concerning the 3rd operation gestalt of this invention correspond to drawing 1 , and having shown it.

[Drawing 11] Drawing in which having made the spinning reel concerning the 4th operation gestalt of this invention correspond to drawing 1 , and having shown it.

[Drawing 12] Drawing showing the condition of having looked down on the main part of a reel of the spinning reel concerning the 4th operation gestalt from the front.

[Description of Notations]

1 -- Main part of a reel

2 -- Rota
6 -- Automatic turnaround of a bail arm
7 -- Brake mechanism
8 -- Distinction indicator
21 22 -- Bail support arm
50 -- Bail arm
60 -- Kick lever
70 -- Braking member
74 -- Braking board
740 -- The contact surface established in the braking board

[Translation done.]